# STIC Search Report
## Biotech-Chem Library

**STIC Database Tracking Number: 97396**

**TO: Ralph J Gitomer**
**Location: m 11B01; r 11D11**
**Art Unit: 1651**
**Tuesday, June 24, 2003**

**Case Serial Number: 09/763018**

**From: Barb O'Bryen**
**Location: Biotech-Chem Library**
**CM1-6A05**
**Phone: 308-4291**

**barbara.obryen@uspto.gov**

## Search Notes

Ralph,
I also searched Biosis, FROSTI (foodline: food science and technology), and FSTA (food science and technology abstracts), but didn't find anything useful there, so they don't show up in the search history.
Barb

6/5/2003

09/763,018

The priority date is 8/19/1998. I have a reference for the device. The invention is for testing animal feed that has enzymes added to it to improve digestibility; testing for uniformity of distribution of the enzymes, or testing activity of the enzymes. Testing is done in the field. Xylanase is a preferred enzyme tested for, also shown are glucanase and cellulase. Feeds are in pulverulent form or granulated form.

Ralph

# STIC SEARCH RESULTS FEEDBACK FORM

## Biotech-Chem Library

Questions about the scope or the results of the search? Contact ***the searcher or contact:***

**Mary Hale, Information Branch Supervisor**
**308-4258, CM1-1E01**

## Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1610*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

*Types of relevant prior art found:*

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

**Comments:**

**Drop off or send completed forms to STIC/Biotech-Chem Library CM1 – Circ. Desk**

```
=> fil capl
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FILE COVERS 1907 - 24 Jun 2003  VOL 138 ISS 26
FILE LAST UPDATED: 23 Jun 2003  (20030623/ED)
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This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> d que l15; d que l36; d que l41

L4            3 SEA FILE=REGISTRY ABB=ON  XYLANASE/CN
L5            1 SEA FILE=REGISTRY ABB=ON  GLUCANASE/CN
L6            1 SEA FILE=REGISTRY ABB=ON  CELLULASE/CN
L7         4887 SEA FILE=CAPLUS ABB=ON  L4
L8          379 SEA FILE=CAPLUS ABB=ON  L5
L9        13412 SEA FILE=CAPLUS ABB=ON  L6
L11        3992 SEA FILE=CAPLUS ABB=ON  FEED ANALYSIS/CT
L12        7190 SEA FILE=CAPLUS ABB=ON  ENZYMES/CT (L)(ANALYSIS OR ANT/RL)
L13         310 SEA FILE=CAPLUS ABB=ON  ((L7 OR L8 OR L9))(L)ANT/RL
L15          16 SEA FILE=CAPLUS ABB=ON  (L12 OR L13) AND L11

L4            3 SEA FILE=REGISTRY ABB=ON  XYLANASE/CN
L5            1 SEA FILE=REGISTRY ABB=ON  GLUCANASE/CN
L6            1 SEA FILE=REGISTRY ABB=ON  CELLULASE/CN
L7         4887 SEA FILE=CAPLUS ABB=ON  L4
L8          379 SEA FILE=CAPLUS ABB=ON  L5
L9        13412 SEA FILE=CAPLUS ABB=ON  L6
L10       23953 SEA FILE=CAPLUS ABB=ON  FOOD ANALYSIS/CT
L11        3992 SEA FILE=CAPLUS ABB=ON  FEED ANALYSIS/CT
L12        7190 SEA FILE=CAPLUS ABB=ON  ENZYMES/CT (L)(ANALYSIS OR ANT/RL)
L13         310 SEA FILE=CAPLUS ABB=ON  ((L7 OR L8 OR L9))(L)ANT/RL
L14         211 SEA FILE=CAPLUS ABB=ON  (L12 OR L13) AND (L10 OR L11)
L20       53201 SEA FILE=CAPLUS ABB=ON  PULVERULEN? OR GRANULAT?
L36           0 SEA FILE=CAPLUS ABB=ON  L14 AND L20

L4            3 SEA FILE=REGISTRY ABB=ON  XYLANASE/CN
L5            1 SEA FILE=REGISTRY ABB=ON  GLUCANASE/CN
L6            1 SEA FILE=REGISTRY ABB=ON  CELLULASE/CN
L7         4887 SEA FILE=CAPLUS ABB=ON  L4
L8          379 SEA FILE=CAPLUS ABB=ON  L5
L9        13412 SEA FILE=CAPLUS ABB=ON  L6
L10       23953 SEA FILE=CAPLUS ABB=ON  FOOD ANALYSIS/CT
L11        3992 SEA FILE=CAPLUS ABB=ON  FEED ANALYSIS/CT
```

'Role ANT = analyte

Searched by Barb O'Bryen, STIC 308-4291

[redacted]

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L12        7190 SEA FILE=CAPLUS ABB=ON  ENZYMES/CT (L)(ANALYSIS OR ANT/RL)
L13         310 SEA FILE=CAPLUS ABB=ON  ((L7 OR L8 OR L9))(L)ANT/RL
L14         211 SEA FILE=CAPLUS ABB=ON  (L12 OR L13) AND (L10 OR L11)
L41           4 SEA FILE=CAPLUS ABB=ON  L14 AND (SOLIDS/CT OR PELLET? OR SOLID
                F!!D#)


=> s l15 or l41

L153         19 L15 OR L41

=> fil agricola

FILE 'AGRICOLA' ENTERED AT 14:40:35 ON 24 JUN 2003


FILE COVERS 1970 TO 10 Jun 2003 (20030610/ED)

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of the Department of Agriculture of the United States of
America.  It contains copyrighted material.  All rights
reserved.  (2003)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d que l75; d que l79; d que l89

L67        42671 SEA FILE=AGRICOLA ABB=ON  ENZYME ACTIVITY/CT
L68         1011 SEA FILE=AGRICOLA ABB=ON  FEED EVALUATION/CT
L69         4806 SEA FILE=AGRICOLA ABB=ON  FEEDS/CT
L71        15805 SEA FILE=AGRICOLA ABB=ON  R300/CC = Feed composition
L75            3 SEA FILE=AGRICOLA ABB=ON  L67 AND (L69 OR L71) AND L68



L67        42671 SEA FILE=AGRICOLA ABB=ON  ENZYME ACTIVITY/CT
L69         4806 SEA FILE=AGRICOLA ABB=ON  FEEDS/CT
L71        15805 SEA FILE=AGRICOLA ABB=ON  R300/CC
L74         5623 SEA FILE=AGRICOLA ABB=ON  XYLANASE# OR GLUCANASE# OR CELLULASE#

L76           43 SEA FILE=AGRICOLA ABB=ON  L67 AND (L69 OR L71) AND L74
L77         8122 SEA FILE=AGRICOLA ABB=ON  DETECTION/CT
L78         5114 SEA FILE=AGRICOLA ABB=ON  ANALYTICAL METHODS/CT
L79            3 SEA FILE=AGRICOLA ABB=ON  L76 AND (L77 OR L78)



L67        42671 SEA FILE=AGRICOLA ABB=ON  ENZYME ACTIVITY/CT
L68         1011 SEA FILE=AGRICOLA ABB=ON  FEED EVALUATION/CT
L69         4806 SEA FILE=AGRICOLA ABB=ON  FEEDS/CT
L71        15805 SEA FILE=AGRICOLA ABB=ON  R300/CC
L82         3804 SEA FILE=AGRICOLA ABB=ON  PELLET?
L83          152 SEA FILE=AGRICOLA ABB=ON  PULVERULEN?
L84         1308 SEA FILE=AGRICOLA ABB=ON  GRANULAT?
L85          538 SEA FILE=AGRICOLA ABB=ON  SOLID F!!D#
L87         1993 SEA FILE=AGRICOLA ABB=ON  ASSAYS/CT
L88          734 SEA FILE=AGRICOLA ABB=ON  QUANTITATIVE TECHNIQUES/CT
L89            1 SEA FILE=AGRICOLA ABB=ON  L67 AND (L68 OR L69 OR L71) AND (L82
                OR L83 OR L84 OR L85) AND (L87 OR L88)


=> s l75 or l79 or l89
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```
L154          6 L75 OR L79 OR L89

=> fil caba

FILE 'CABA' ENTERED AT 14:40:37 ON 24 JUN 2003
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FILE COVERS 1973 TO 6 Jun 2003 (20030606/ED)

This file contains CAS Registry Numbers for easy and accurate
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=> d que l93; d que l103; d que l114

L90        40238 SEA FILE=CABA ABB=ON  ENZYME ACTIVITY/CT
L91          344 SEA FILE=CABA ABB=ON  FEED EVALUATION/CT
L93            0 SEA FILE=CABA ABB=ON  L90 AND L91



L91          344 SEA FILE=CABA ABB=ON  FEED EVALUATION/CT
L97         1604 SEA FILE=CABA ABB=ON  XYLANASE
L98         2102 SEA FILE=CABA ABB=ON  GLUCANASE#
L99         2126 SEA FILE=CABA ABB=ON  CELLULASE/CT
L100       15692 SEA FILE=CABA ABB=ON  ACTIVITY/CT
L101        1263 SEA FILE=CABA ABB=ON  ENZYME PREPARATIONS/CT
L102         113 SEA FILE=CABA ABB=ON  (L101 OR (L97 OR L98 OR L99)) AND L100
L103           0 SEA FILE=CABA ABB=ON  L91 AND L102



L90        40238 SEA FILE=CABA ABB=ON  ENZYME ACTIVITY/CT
L92        24917 SEA FILE=CABA ABB=ON  FEEDS/CT
L97         1604 SEA FILE=CABA ABB=ON  XYLANASE
L98         2102 SEA FILE=CABA ABB=ON  GLUCANASE#
L99         2126 SEA FILE=CABA ABB=ON  CELLULASE/CT
L100       15692 SEA FILE=CABA ABB=ON  ACTIVITY/CT
L101        1263 SEA FILE=CABA ABB=ON  ENZYME PREPARATIONS/CT
L102         113 SEA FILE=CABA ABB=ON  (L101 OR (L97 OR L98 OR L99)) AND L100
L104       37596 SEA FILE=CABA ABB=ON  RR300/CC = Feed composition & quality
L105         145 SEA FILE=CABA ABB=ON  L104 AND (L102 OR L90)
L109       67525 SEA FILE=CABA ABB=ON  ANALYTICAL METHODS/CT OR ASSAYS/CT OR
                 CHEMICAL ANALYSIS/CT OR DETERMINATION/CT OR QUANTITATIVE
                 ANALYSIS/CT
L113         446 SEA FILE=CABA ABB=ON  ENZYMES/CT AND L92
L114           4 SEA FILE=CABA ABB=ON  L105 AND L109 AND L113


=> fil wpids; d que l150

FILE 'WPIDS' ENTERED AT 14:40:38 ON 24 JUN 2003
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FILE LAST UPDATED:          19 JUN 2003      <20030619/UP>
MOST RECENT DERWENT UPDATE:     200339        <200339/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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L44       170625 SEA FILE=WPIDS ABB=ON  FOOD#
L45       447708 SEA FILE=WPIDS ABB=ON  FEED#
L46        65104 SEA FILE=WPIDS ABB=ON  ENZYME#
L47          685 SEA FILE=WPIDS ABB=ON  GLUCANASE#
L48          654 SEA FILE=WPIDS ABB=ON  XYLANASE#
L49         2654 SEA FILE=WPIDS ABB=ON  CELLULASE#
L51        60580 SEA FILE=WPIDS ABB=ON  SOLIDS OR SOLID F!!D#
L52        36782 SEA FILE=WPIDS ABB=ON  PELLET?
L53         2097 SEA FILE=WPIDS ABB=ON  PULVERULENT?
L54        39822 SEA FILE=WPIDS ABB=ON  GRANULAT?
L62       782680 SEA FILE=WPIDS ABB=ON  MEASUR? OR QUANTIF? OR ANALY?
L149          65 SEA FILE=WPIDS ABB=ON  L62(5A)((L46 OR L47 OR L48 OR L49))(10A)
                 (L44 OR L45)
L150           1 SEA FILE=WPIDS ABB=ON  (L51 OR L52 OR L53 OR L54) AND L149


=> dup rem l154,l114,l153,l150
FILE 'AGRICOLA' ENTERED AT 14:41:01 ON 24 JUN 2003

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PROCESSING COMPLETED FOR L154
PROCESSING COMPLETED FOR L114
PROCESSING COMPLETED FOR L153
PROCESSING COMPLETED FOR L150
L155          28 DUP REM L154 L114 L153 L150 (2 DUPLICATES REMOVED)
                 ANSWERS '1-6' FROM FILE AGRICOLA
                 ANSWERS '7-10' FROM FILE CABA
                 ANSWERS '11-28' FROM FILE CAPLUS

=> d ibib ab hitrn 1-28; fil hom

L155 ANSWER 1 OF 28  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2003)
ACCESSION NUMBER:         2002:18743  AGRICOLA
DOCUMENT NUMBER:          IND23253862
TITLE:                    Technical note: methods for detecting liquid enzyme
                          additives added to animal feeds.
AUTHOR(S):                Wallace, R.J.; Hartnell, G.F.
AVAILABILITY:             DNAL (49 J82)
SOURCE:                   Journal of animal science, Oct 2001. Vol. 79, No. 10.
                          p. 2731-2735

                          Searched by Barb O'Bryen, STIC  308-4291
```

Publisher: Savoy, IL : American Society of Animal Science.
NOTE: CODEN: JANSAG; ISSN: 0021-8812
PUB. COUNTRY: Includes references
DOCUMENT TYPE: Illinois; United States
FILE SEGMENT: Article
LANGUAGE: U.S. Imprints not USDA, Experiment or Extension
English

AB Methods for detecting and measuring the quantity of fibrolytic enzyme preparations added to feeds were investigated by enzymatic and tracer methods. Enzyme preparations added to corn silage, rye-grass silage, and a total mixed ration containing both silages and a concentrate could not be detected using their enzymatic activities. Glycosidase activities of solubles washed from the feed were more than an order of magnitude greater than glycosidases in the added enzymes. Carboxymethylcellulase and **xylanase** activity determinations, using reducing sugar release as the measurement, were subject to interference from reducing sugars present in the feed. A fluorescent tracer method, using fluorescein added at a rate of 1 g/L of feed enzymes, or 2 g/t of feed, was developed that enabled sensitive detection of liquid enzyme additions to feeds.

L155 ANSWER 2 OF 28 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003)

ACCESSION NUMBER: 2001:1690 AGRICOLA
DOCUMENT NUMBER: IND22079877
TITLE: Solubilization and degradation of ribulose-1,5-bisphosphate carboxylase/oxygenase (EC 4.1.1.39; Rubisco) protein from white clover (Trifolium repens) and Lotus corniculatus by rumen microorganisms and the effect of condensed tannins on these processes.
AUTHOR(S): Min, B.R.; McNabb, W.C.; Barry, T.N.; Peters, J.S.
SOURCE: The Journal of agricultural science, May 2000. Vol. 134, No. pt.3. p. 305-317
Publisher: Cambridge : Cambridge University Press.
NOTE: CODEN: JASIAB; ISSN: 0021-8596
PUB. COUNTRY: Includes references
DOCUMENT TYPE: England; United Kingdom
FILE SEGMENT: Article
LANGUAGE: Non-U.S. Imprint other than FAO
English

AB In situ and in vitro rumen incubations were used to determine the effect of condensed tannins (CT) on the solubilization and degradation of the plant protein from white clover (Trifolium repens) and Lotus corniculatus. These forages contained, respectively 0.3 and 22.1 g CT/kg dry matter (DM). The sheep used for the experiments were also fed either white clover or L. corniculatus. Effects of CT were determined by making measurements in the presence and absence of polyethylene glycol (PEG; molecular weight 3500), which binds and inactivates CT. The loss of DM, neutral detergent fibre (NDF), total nitrogen (N) and Rubisco (ribulose-1,5-bisphosphate carboxylase/oxygenase; EC 4.1.1.39; fraction I leaf protein) from polyester bags suspended in the rumen of sheep was measured. The loss of these constituents from polyester bags suspended in the rumen was used as a measurement of their solubilization. Degradation was defined as the disappearance of Rubisco from white clover and L. corniculatus added to in vitro incubations with rumen fluid obtained from the same fistulated sheep fed either white clover or L. corniculatus. In the absence of PEG, the in situ loss of Rubisco from L. corniculatus was less rapid than the loss of this protein from white clover when each forage was incubated in the rumen of sheep fed the same diet. Addition of PEG tended to increase the loss of Rubisco from L. corniculatus, suggesting that CT slowed the rates of solubilization of Rubisco from this forage. Effects of rumen fluid were

small, but there was some evidence that the rumen fluid in sheep fed L. corniculatus reduced the solubilization of Rubisco from white clover. The action of CT did not inhibit the in situ loss of NDF from either white clover or L. corniculatus. In the absence of PEG, the in vitro degradation of Rubisco from L. corniculatus was slower when compared to the degradation of this protein from white clover; PEG addition increased the degradation of Rubisco from L. corniculatus, but not from white clover, showing that CT was the causal agent. The addition of CT extracted from L. corniculatus markedly depressed the degradation of Rubisco from white clover, with the effect being completely reversible by PEG. The large subunit (LSU) of Rubisco was consistently degraded at a faster rate than the small subunit (SSU) and added CT had a greater effect in slowing the degradation of the LSU compared to the SSU. There was little difference in the degradation of Rubisco when rumen fluid from sheep fed either white clover or L. corniculatus was used for in vitro incubations. It was concluded that the action of CT from L. corniculatus reduces the digestion of protein in the rumen of sheep. This effect is predominantly due to the action of CT reducing the degradation of plant protein, although CT also reduced the solubilization of plant protein. The main effects of CT on protein solubilization and degradation seemed to be produced locally by CT present in plant tissue; transfer of these effects through rumen fluid was small in magnitude.

L155 ANSWER 3 OF 28 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003)

ACCESSION NUMBER: 95:33040 AGRICOLA
DOCUMENT NUMBER: IND20460764
TITLE: Technical note: detection and quantification of supplemental fungal beta-glucanase activity in animal feed.
AUTHOR(S): Walsh, G.A.; Murphy, R.A.; Killeen, G.F.; Headon, D.R.; Power, R.F.
CORPORATE SOURCE: Alltech's European Biosciences Research Centre, Galway, Ireland.
AVAILABILITY: DNAL (49 J82)
SOURCE: Journal of animal science, Apr 1995. Vol. 73, No. 4. p. 1074-1076
Publisher: Champaign, Ill. : American Society of Animal Science.
CODEN: JANSAG; ISSN: 0021-8812
NOTE: Includes references
PUB. COUNTRY: Illinois; United States
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB Selected hydrolytic enzymes are added to animal feeds in order to degrade specific antinutritional factors and(or) to increase availability of certain components of feedstuffs to the animal. A method is described that allows detection and quantification of beta-glucanase activity in complex feedstuffs. The method is based on radial diffusion of an enzyme-containing feed extract through an agar gel in which lichenan substrate (a relatively inexpensive glucan of mixed beta 1 to 4 and beta 1 to 3 linkages) has been dissolved. A linear relationship between the diameter of the zone of substrate hydrolyzed and the log of enzyme activity present was observed. The assay described is technically straightforward and requires no specialized equipment. At typical commercial inclusion levels (1 kg/t), the activity of a supplemental beta-glucanase, added to feed in a commercial mill was determined by averaging several measurements, with a precision of +/- 4%, variation between individual readings of +/- 11.3% (SD), and recovery of 109%. By using high-concentration feed extracts, the method was sensitive enough to

detect background and(or) supplemental beta-glucanase activities as low as .05 kg/t supplement equivalent. This method allows consumers, producers, and regulatory authorities to measure the activity of beta-glucanase in feed at commercial inclusion levels and, hence, study the effects of processes such as **pelleting** and extrusion on such supplements.

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ACCESSION NUMBER: 97:12179 AGRICOLA
DOCUMENT NUMBER: IND20546727
TITLE: An in vitro procedure for studying enzymic dephosphorylation of phytate in maize-soyabean feeds for turkey poults.
AUTHOR(S): Zyla, K.; Ledoux, D.R.; Garcia, A.; Veum, T.L.
CORPORATE SOURCE: University of Agriculture, Krakow, Poland.
SOURCE: The British journal of nutrition, July 1995. Vol. 74, No. 1. p. 3-17
Publisher: Cambridge [England] : Cambridge University Press ; Chicago, Ill. : Agent for U.S.A., The University of Chicago Press, 1947-
CODEN: BJNUAV; ISSN: 0007-1145
NOTE: Includes references
PUB. COUNTRY: England; United Kingdom
DOCUMENT TYPE: Article
FILE SEGMENT: Non-U.S. Imprint other than FAO
LANGUAGE: English

AB An in vitro method was developed to predict inorganic P release from maize soyabean poultry feeds containing supplemental phytase (EC 3.1.3.8), and to quantify the effect of acid phosphatase (EC 3.1.3.2), fungal protease (EC 3.4.23.6) and Aspergillus niger **cellulase** (EC 3.2.1.4) on phytate dephosphorylation. Pepsin (EC 3.4.23.1) and pancreatin digestion periods were preceded by a 30 min pre-incubation at pH 5.25 to simulate digestion in the crop of poultry. Pancreatin digestion was carried out in dialysis tubing, with a ratio of about 1:25 (v/v) between the digesta and dialysing medium, to simulate gradient absorption from the duodenum. The feed:water ratio was kept within physiological limits and a constant proportion of feed weight to digestive enzymes was maintained. There was a linear response to increasing dosages of phytase up to 1000 phytase units (FTU)/kg feed, and to increasing phosphate concentration in feeds. In vivo validation was performed with growing turkeys (1-3 weeks) fed on diets containing 12 g Ca/kg and 0,500 or 1000 FTU phytase/kg in a factorial arrangement with 0, 1, 2 or 3 g supplemental phosphate/kg (from KH2PO4). After a simple transformation (variable/in vitro P =f(in vitro P)), amounts of P hydrolysed from feed samples by in vitro digestions correlated with 3-week body-weight gain (R 0.986, $P < 0.0001$), toe ash (R 0.952, $P < 0.0001$), feed intake (R 0.994, $P < 0.0001$) and feed efficiency (R 0.992, $P < 0.0001$). The dephosphorylating ability of phytase in vitro was significantly enhanced ($P < 0.05$) by the addition of acid phosphatase. Fungal acid protease and Aspergillus niger **cellulase** also enhanced the dephosphorylation process in vitro.

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ACCESSION NUMBER: 89:105359 AGRICOLA
DOCUMENT NUMBER: IND89058867
TITLE: Quality of alfalfa herbage estimated by a prepared cellulase solution and near infrared reflectance spectroscopy.
AUTHOR(S): Bughrara, S.S.; Sleper, D.A.; Belyea, R.L.; Marten,

G.C.
CORPORATE SOURCE: Missouri Agricultural Experiment Station, University of Missouri, Columbia, MO
AVAILABILITY: DNAL (450 C16)
SOURCE: Canadian journal of plant science = Revue canadienne de phytotechnie, July 1989. Vol. 69, No. 3. p. 833-839
Publisher: Ottawa : Agricultural Institute of Canada.
CODEN: CPLSAY; ISSN: 0008-4220
NOTE: Includes references.
DOCUMENT TYPE: Article
FILE SEGMENT: Non-U.S. Imprint other than FAO
LANGUAGE: English
SUMMARY LANGUAGE: French

L155 ANSWER 6 OF 28 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003)
ACCESSION NUMBER: 86:72419 AGRICOLA
DOCUMENT NUMBER: ADL86056526
TITLE: The use of an enzymatic technique to predict digestibility, metabolizable and net energy of compound feedstuffs for ruminants.
AUTHOR(S): De Boever, J.L.; Cottyn, B.G.; Buysse, F.X.; Wainman, F.W.; Vanacker, J.M.
AVAILABILITY: DNAL (SF95.A55)
SOURCE: Animal feed science and technology, May 1986. Vol. 14, No. 3/4. p. 203-214
Publisher: Amsterdam : Elsevier.
CODEN: AFSTDH; ISSN: 0377-8401
NOTE: Includes references.
DOCUMENT TYPE: Article
FILE SEGMENT: Non-U.S. Imprint other than FAO
LANGUAGE: English

L155 ANSWER 7 OF 28 CABA COPYRIGHT 2003 CABI DUPLICATE 2
ACCESSION NUMBER: 97:51730 CABA
DOCUMENT NUMBER: 971403190
TITLE: Viscometric determination of beta -**glucanase** and endoxylanase activity in feed
AUTHOR: Engelen, A. J.; Heeft, F. C. van der; Randsdorp, P. H. G.; Van der Heeft, F. C.
CORPORATE SOURCE: Gist-brocades B.V., Intercompany Service Laboratory, PO Box 1, 2600 MA Delft, Netherlands.
SOURCE: Journal of AOAC International, (1996) Vol. 79, No. 5, pp. 1019-1025. 2 ref.
ISSN: 1060-3271
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A method is described for viscometric estimation of beta -**glucanase** and endoxylanase activities in feed samples. The method is based on estimation of the decrease in viscosity as a result of hydrolysis of glycosidic bonds in beta -glucan and xylan at pH 3.5. This method does not require a blank sample (feed without enzyme addition), and it does not need standard addition for reliable quantitation.

L155 ANSWER 8 OF 28 CABA COPYRIGHT 2003 CABI
ACCESSION NUMBER: 1999:149437 CABA
DOCUMENT NUMBER: 991413576
TITLE: Application of proteolytic enzymes for determining the rate of ruminal protein degradation of feeds
Zastosowanie enzymow proteolitycznych do okreslania tempa degradacji bialka pasz w zwaczu

Searched by Barb O'Bryen, STIC 308-4291

AUTHOR: Kosmala, I.
CORPORATE SOURCE: Instytut Zootechniki, ul. Sarego 2, 31-047 Krakow, Poland.
SOURCE: Roczniki Naukowe Zootechniki, (1999) Vol. 26, No. 1, pp. 111-124. 25 ref.
ISSN: 0137-1657
DOCUMENT TYPE: Journal
LANGUAGE: Polish
SUMMARY LANGUAGE: English; German; Russian
AB The rate of rumen protein degradation of feeds was determined using the proteinases, ficin, protease and pancreatin. Degradation was measured in concentrate feeds varying in CP content from 9.98 (maize) to 40.72% (guar meal), and in lucerne forage (27.65%). During the first 2 h of enzyme activity, protein was found to degrade rapidly. After deducting these values from the amount of buffer-soluble protein, mean values of protein degradation for all the feeds were 2.73%/h for incubation with ficin, 6.48%/h with protease, and 5.55%/h with pancreatin. The rate of protein degradation became stable as incubation time increased. Protein degradation was minimal between 24 and 48 h of incubation. For this reason, the amount of protein degraded during 1 h in the time interval of 2 to 24 h of incubation with enzyme was used to determine the mean rate of protein degradation. In all feeds, the rate of protein degradation in the 2 to 24 h interval was 0.72% protein/h for the incubation with ficin and protease and 1.12% protein/h for the incubation with pancreatin.

L155 ANSWER 9 OF 28 CABA COPYRIGHT 2003 CABI
ACCESSION NUMBER: 2000:83260 CABA
DOCUMENT NUMBER: 20001412284
TITLE: Study on the suitable conditions of enzymatic reactivity for determination of the disappearance of sample crude protein in vitro by dialysis tube method
AUTHOR: Huang RuiLin; Li TieJun; Tan ZhiLiang; Xing TingXian; Huang, R. L.; Li, T. J.; TAn, Z. L.; Xing, T. X.
CORPORATE SOURCE: Changsha Institute of Agricultural Modernization, Chinese Academy of Sciences, Changsha 410125, Hunan, China.
SOURCE: Acta Zoonutrimenta Sinica, (1999) Vol. 11, No. 4, pp. 51-58. 9 ref.
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
SUMMARY LANGUAGE: English

L155 ANSWER 10 OF 28 CABA COPYRIGHT 2003 CABI
ACCESSION NUMBER: 97:90218 CABA
DOCUMENT NUMBER: 971406712
TITLE: Assay of enzyme activity in feeds
AUTHOR: Heil, K.
CORPORATE SOURCE: Hoechst Veterinar GmbH, Frankfurt am Main, Germany.
SOURCE: Zootecnica International, (1997) Vol. 20, No. 3, pp. 40-43.
ISSN: 0392-0593
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The steps involved in a feed enzyme assay, the requirements of such methods and their validation are discussed briefly.

L155 ANSWER 11 OF 28 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
ACCESSION NUMBER: 2000:144992 CAPLUS
DOCUMENT NUMBER: 132:207205
TITLE: Fast measuring device of enzymatic activity
INVENTOR(S): Roberts, Neil; Moores, Janet

Searched by Barb O'Bryen, STIC 308-4291

PATENT ASSIGNEE(S): Rhone-Poulenc Animal Nutrition S.A., Fr.
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2000011136 | A1 | 20000302 | WO 1999-FR1990 | 19990816 |
| W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| CA 2341581 | AA | 20000302 | CA 1999-2341581 | 19990816 |
| AU 9951727 | A1 | 20000314 | AU 1999-51727 | 19990816 |
| AU 752174 | B2 | 20020905 | | |
| EP 1105456 | A1 | 20010613 | EP 1999-936736 | 19990816 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |
| BR 9914294 | A | 20011106 | BR 1999-14294 | 19990816 |
| JP 2002523038 | T2 | 20020730 | JP 2000-566393 | 19990816 |

PRIORITY APPLN. INFO.: FR 1998-10533 A 19980819
WO 1999-FR1990 W 19990816

AB The invention concerns a device for the fast measurement of enzymic activity in a **solid food** comprising (1) a container for receiving the sample to be tested; (2) a reagent particular to the enzyme whereof the activity is to be measured; and (3) a buffer for placing the enzyme in soln.

IT **37278-89-0**, Rovabio xylanase TRLC
RL: **ANT (Analyte)**; ANST (Analytical study)
(fast measuring device for enzymic activity in food)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 12 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:849773 CAPLUS
DOCUMENT NUMBER: 137:334875
TITLE: Multichamber device and uses thereof for processing of biological samples
INVENTOR(S): Schumacher, Richard T.; Tao, Feng; Lawrence, Nathan P.; Kakita, Allan; Manak, Mark M.; Laugharn, James A., Jr.
PATENT ASSIGNEE(S): Boston Biomedica, Inc., USA
SOURCE: PCT Int. Appl., 74 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2002088296 | A1 | 20021107 | WO 2002-US13187 | 20020426 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, | | | | |

UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
US 2002197631 A1 20021226 US 2002-134054 20020426
PRIORITY APPLN. INFO.: US 2001-286509P P 20010426
US 2001-308869P P 20010730
US 2001-337336P P 20011108

AB Devices and methods are described for homogenization, processing, detection, and anal. of biol. samples such as insects, fungi, bacteria, and plant and animal tissues. Multiple chambers in these devices permit different processing functions to be carried out at each stage, such that the resulting homogenized product can be further processed, purified, analyzed, and/or biomols. such as metabolites, proteins and nucleic acids, or pharmaceutical products can be detected. The device can be used in a hydrostatic pressure app., in which different activities, i.e. incubations, addn. or renewal of reagent, and generation and detection of signal can be carried out in the appropriate chamber. The method improves the preservation of biomols. from chem. and enzymic degrdn. relative to conventional means. Addnl., this method enables automated sample prepn. and anal. processes. Genomic DNA and proteins were extd. from rat brain samples using a pressure cycling device.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 13 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:10722 CAPLUS
DOCUMENT NUMBER: 136:66625
TITLE: Synthesis and use of chromogens for food preservation analysis
INVENTOR(S): Ribi, Hans
PATENT ASSIGNEE(S): Segan Industries, Inc., USA
SOURCE: PCT Int. Appl., 64 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2002000920 | A2 | 20020103 | WO 2001-US20260 | 20010625 |
| WO 2002000920 | A3 | 20021017 | | |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

| | | | | |
|---|---|---|---|---|
| EP 1297333 | A2 | 20030402 | EP 2001-950471 | 20010625 |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRIORITY APPLN. INFO.: US 2000-602001 A 20000623
WO 2001-US20260 W 20010625

AB The invention concerns providing a method for the labeling of food to ensure its freshness. This may be done with ingestible compns. comprising a chromic change agent, methods of making and using them and their potential applications are provided. The chromic change agent alternatively may be assocd. with the ingestible, such as a packaging

material for the ingestible. In response to a triggering event, phys. or chem., the chromic change agent changes color to provide information as to the history of the ingestible, either prior or contemporaneous with use. Depending on the use, the color change agent may be reversible or irreversible. Various solid or liq. ingestible compns. are provided for detg. ingestible temp., storage temp., user temp., light exposure, pH change, hydration or solvation change, mech. stress, and the like, particularly in comestibles. Of particular interest are polydiacetylene polymers that may be formulated to provide compns. having numerous different color transition triggering mechanisms. The invention is also related to other chromic change agents that may be incorporated into ingestibles.

L155 ANSWER 14 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:663563 CAPLUS
DOCUMENT NUMBER: 137:324347
TITLE: Determination of xylanase, .beta.-glucanase, and cellulase activity
AUTHOR(S): Koenig, Joachim; Grasser, Roland; Pikor, Heather; Vogel, Kurt
CORPORATE SOURCE: Roche Vitamins Ltd, Basel, 4070, Switz.
SOURCE: Analytical and Bioanalytical Chemistry (2002), 374(1), 80-87
CODEN: ABCNBP; ISSN: 1618-2642
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A simple, robust and highly reproducible method for the detn. of xylanase, .beta.-glucanase, and cellulase in com. feed enzyme prepns. is described. The method is based on measurement of reducing moieties released by the enzymes from arabinoxylan, .beta.-glucan, or CM-cellulose (CMC) and is independent of enzyme stds.
IT **9012-54-8**, Cellulase **37278-89-0**, Xylanase
RL: **ANT (Analyte)**; ANST (Analytical study)
(xylanase, .beta.-glucanase, and cellulase activity detd. in feed enzyme prepns. based on reducing moieties)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 15 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:47209 CAPLUS
DOCUMENT NUMBER: 136:385078
TITLE: Process stability and methods of detection of feed enzymes in complete diets
AUTHOR(S): Bedford, M. R.; Silversides, F. G.; Cowan, W. D.
CORPORATE SOURCE: Finnfeeds, Wiltshire, SN8 1XN, UK
SOURCE: Enzymes in Farm Animal Nutrition (2001), 377-387.
Editor(s): Bedford, Michael R.; Partridge, Gary G.
CABI Publishing: Wallingford, UK.
CODEN: 69CEXE; ISBN: 0-85199-393-1
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review. The topics include major classes of enzymes used in animal feeds, differences in enzymes resistance to thermal denaturation in vitro and during feed processing, feed anal. problems due to feed matrix interaction, data on enzymes behavior during feed processing, and future trends. The main enzymes considered are phytase, .beta.-glucanase, and xylanase. Several approaches are suggested to decrease the neg. effects of feed heat treatment, including protecting the enzymes from steam penetration, using heat-resistant enzymes, or simply adding the enzymes in a liq. form after feed processing. Common feed processing temps. cannot be increased indefinitely because of the damage to vitamins, proteins and starch, which may be even more susceptible to heat damage than exogenous

feed enzyme additives.
IT **37278-89-0**, Xylanase
RL: **ANT (Analyte)**; FFD (Food or feed use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(feed enzyme additives in complete diets, their stability during feed processing and feed anal. issues)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:47198 CAPLUS
DOCUMENT NUMBER: 136:385074
TITLE: Analysis of feed enzymes
AUTHOR(S): McCleary, B. V.
CORPORATE SOURCE: Megazyme International Ireland Limited, Bray, Ire.
SOURCE: Enzymes in Farm Animal Nutrition (2001), 85-107.
Editor(s): Bedford, Michael R.; Partridge, Gary G.
CABI Publishing: Wallingford, UK.
CODEN: 69CEXE; ISBN: 0-85199-393-1
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review discussing procedures for .beta.-glucanase, .beta.-xylanase, .alpha.-amylase, .alpha.-galactosidase, phytase, and proteinase used as feed enzymes.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 17 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:799704 CAPLUS
DOCUMENT NUMBER: 132:321044
TITLE: Quantitative analysis of pyroglutamic acid in peptides. [Erratum to document cited in CA131:213274]
AUTHOR(S): Suzuki, Yoshio; Motoi, Hirofumi; Sato, Kenji
CORPORATE SOURCE: Nisshin Flour Milling Company Limited, Ohi-machi Iruma-gun Saitama, 356-8511, Japan
SOURCE: Journal of Agricultural and Food Chemistry (1999), 47(12), 5297
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Under HPLC App. and Procedure, anion-exchange should be cation-exchange. In Fig. 3, LH-RH is represented by circles and bombesin by triangles. Under Anal. of Bioactive Peptides, Tsunashima should be Tsunasawa, as should be the ref. given under Literature Cited. Under Anal. of Industrially Prepd. Wheat Gluten Hydrolyzate, the correct gluten hydrolyzate content is 0.486 mmol/g. The correct page range for the Tsunasawa et al. (1998) ref. is 778-783.

L155 ANSWER 18 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:431076 CAPLUS
DOCUMENT NUMBER: 131:213274
TITLE: Quantitative Analysis of Pyroglutamic Acid in Peptides
AUTHOR(S): Suzuki, Yoshio; Motoi, Hirofumi; Sato, Kenji
CORPORATE SOURCE: Nisshin Flour Milling Company Limited, Ohi-machi Iruma-gun Saitama, 356-8511, Japan
SOURCE: Journal of Agricultural and Food Chemistry (1999), 47(8), 3248-3251
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A simplified and rapid procedure for the detn. of pyroglutamic acid in

peptides was developed. The method involves the enzymic cleavage of an N-terminal pyroglutamate residue using a thermostable pyroglutamate aminopeptidase and isocratic HPLC sepn. of the resulting enzymic hydrolyzate using a column switching technique. Pyroglutamate aminopeptidase from a thermophilic archaebacteria, Pyrococcus furiosus, cleaves N-terminal pyroglutamic acid residue independent of the mol. wt. of the substrate. It cleaves more than 85% of pyroglutamate from peptides whose mol. wt. ranges from 362.4 to 4599.4 Da. Thus, a new method is presented that quant. ests. N-terminal pyroglutamic acid residue in peptides.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 19 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:97108 CAPLUS
DOCUMENT NUMBER: 131:55576
TITLE: Enzymic assays for xylanase and .beta.-glucanase feed enzymes
AUTHOR(S): Cosson, T.; Perez Vendrel, A. M.; Gonzalez Teresa, B.; Rene, D.; Taillade, P.; Brufau, J.
CORPORATE SOURCE: Lesaffre Developpement, Marcq-en-Baroeul, 59700, Fr.
SOURCE: Animal Feed Science and Technology (1999), 77(3-4), 345-353
CODEN: AFSTDH; ISSN: 0377-8401
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The anal. of pure enzyme activities is well documented but few data have been published about the comparison of results between several labs. When the enzymes are mixed to an animal feed the dosage is difficult due to different interactions with the feed elements and to the diln. level. Here, the results of the comparison of xylanase and .beta.-glucanase assays of pure enzymes in 3 labs. are disclosed. They show a good repeatability for both methods (CV = 7.2 and 7.0%, resp., for xylanase and .beta.-glucanase activities) and a reproducibility equal to the one listed in the literature (16.6 and 19.3%, resp.). As the enzymes have been introduced in a feed, the methods were adapted to cope up with the restraints linked to the feed elements. In-feed methods are described for xylanase and .beta.-glucanase activities that allow a monitoring of the active enzyme. They can be used for inclusion as well as for dispersal controls.

IT **37278-89-0**, Xylanase
RL: **ANT (Analyte)**; ANST (Analytical study)
(enzymic assays for xylanase and .beta.-glucanase in animal feed)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 20 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1998:721463 CAPLUS
DOCUMENT NUMBER: 129:313096
TITLE: Device and apparatus for the simultaneous detection of multiple analytes
INVENTOR(S): Fitzgerald, Stephen Peter; Lamont, John Victor; Mcconnell, Robert Ivan; Benchikh, El Ouard
PATENT ASSIGNEE(S): Randox Laboratories Ltd., UK
SOURCE: Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| EP 874242 | A1 | 19981028 | EP 1998-303019 | 19980420 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| BR 9800655 | A | 19990810 | BR 1998-655 | 19980417 |
| CA 2235183 | AA | 19981021 | CA 1998-2235183 | 19980420 |
| AU 9861988 | A1 | 19981022 | AU 1998-61988 | 19980420 |
| AU 713388 | B2 | 19991202 | | |
| NO 9801766 | A | 19981022 | NO 1998-1766 | 19980420 |
| GB 2324866 | A1 | 19981104 | GB 1998-8309 | 19980420 |
| GB 2324866 | B2 | 20011114 | | |
| RU 2168174 | C2 | 20010527 | RU 1998-107571 | 19980420 |
| SG 87765 | A1 | 20020416 | SG 1998-759 | 19980420 |
| JP 10319011 | A2 | 19981204 | JP 1998-110687 | 19980421 |
| ZA 9803345 | A | 19990421 | ZA 1998-3345 | 19980421 |
| CN 1215167 | A | 19990428 | CN 1998-115254 | 19980421 |
| HK 1012202 | A1 | 20020517 | HK 1998-113653 | 19981216 |
| US 6498010 | B1 | 20021224 | US 1999-413799 | 19991007 |
| PRIORITY APPLN. INFO.: | | | EP 1997-302707 A | 19970421 |
| | | | US 1998-61171 A3 | 19980416 |

AB A solid state device for performing multi-analyte assays, comprises a substrate and a multiplicity of discrete reaction sites each bearing a ligand covalently bonded to the substrate, wherein the surface of the substrate between the reaction sites is inert with respect to analyte. Such a device may be obtained by a process of activating the surface of the substrate, and applying an array of ligands on to discrete areas on the surface.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 21 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1997:432007 CAPLUS
DOCUMENT NUMBER: 127:94269
TITLE: Collaborative evaluation of a simplified assay for total starch in cereal products (AACC Method 76-13)
AUTHOR(S): Mccleary, B. V.; Gibson, T. S.; Mugford, D. C.
CORPORATE SOURCE: Megazyme International Ireland Limited, Bray Business Park, Bray, Ire.
SOURCE: Cereal Foods World (1997), 42(6), 476-480
CODEN: CFWODA; ISSN: 0146-6283
PUBLISHER: American Association of Cereal Chemists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A procedure for the quant. anal. of total starch in plant materials has been developed and subjected to a comprehensive interlab. study involving 32 labs., in accordance with the protocol for collaborative studies recommended by American Assocn. of Cereal Chemists and AOAC International. The method involves treatment of a sample at approx. 95.degree. with thermostable .alpha.-amylase to obtain starch depolymn. and solubilization. The slurry is then treated with purified amyloglucosidase to give quant. hydrolysis of the starch fragments to glucose, which is measured with glucose oxidase/peroxidase reagent. Test samples used in the interlab. study included modified and native starches, cereal flours and brans, processed cereal products, animal feeds, and plant material. Results were statistically analyzed according to AOAC International guidelines. The procedure was shown to be highly repeatable (relative std. deviation 2.1-3.9%) and reproducible (relative std. deviation 2.9-5.0%), and on the basis of these results has gained first approval status with AACC (AACC Method 76-13) and approval as AOAC Method 986.11. The method is more robust than a method previously reported (AACC Method 76-12), and 20 samples can be analyzed within 2 h.

IT **9012-54-8**, Cellulase
RL: **ANT (Analyte)**; MSC (Miscellaneous); ANST (Analytical study)

(assays for starch in cereal products and cellulase contamination)

L155 ANSWER 22 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1997:384636 CAPLUS
DOCUMENT NUMBER: 127:64687
TITLE: Speciation and nutrition: enzymological approach
AUTHOR(S): Hocquellet, P.
CORPORATE SOURCE: Laboratoire d'Hygiene et de Sante, Institut Europeen de l'environnement de Bordeaux, Bordeaux, 33300, Fr.
SOURCE: Analusis (1997), 25(2), M25-M27
CODEN: ANLSCY; ISSN: 0365-4877
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal; General Review
LANGUAGE: French
AB A review with 9 refs. Detns. of many mineral nutrients by purely instrumental anal. techniques may yield summary (total) values disregarding possible multitude of chem. forms contg. the nutrient in question. The data then may deviate from the results of in vivo nutritional studies since the gastrointestinal environment and functions may differentiate among various chem. forms of the same nutrient. To improve the value of anal. results, it is recommended to include enzyme specificity into the anal. procedures to exploit their substrate selectivity. Anal. isolation techniques can then better differentiate among various mineral nutrient forms present in the feed and food samples.

L155 ANSWER 23 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1998:273189 CAPLUS
DOCUMENT NUMBER: 129:80726
TITLE: Method of analysis for feed enzymes: methodological problems?
AUTHOR(S): Sabatier, Alain M.; Fish, Neville M.
CORPORATE SOURCE: Rhone-Poulenc Animal Nutrition, Antony, 92164, Fr.
SOURCE: Journal of Applied Poultry Research (1996), 5(4), 408-413
CODEN: JAPRFS; ISSN: 1056-6171
PUBLISHER: Applied Poultry Science, Inc.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review (discussion) with no bibliog. refs. Enzyme products currently on the market used as processing aids to enhance feed raw materials have the effect of breaking down macromols. such as hemicellulose, or proteins. Since enzyme users must know the activity of the enzyme product in order for them to rationally formulate their diets, it is necessary to assay enzymes in the feed. Several measurement methods exist for the anal. of enzymes in feed. Are there methodol. problems in measuring enzyme activity that could restrict their utilization. Could the choice of an enzyme for a specific application be based on the no. of units of enzyme activity. In order to answer these questions, the authors clarified what an enzyme is and how its activity is measured: (1) enzymes function only through their catalytic action and an enzyme is specific for a substrate and catalyzes a specific reaction under defined conditions, (2) enzyme activity is measured by different methods, for which substrate quality is of the utmost importance, (3) there is a defined method for each product as a function of its origin and we have to adapt the method of anal. to each feed.

L155 ANSWER 24 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1996:125424 CAPLUS
DOCUMENT NUMBER: 124:230267
TITLE: Analysis of enzymes in fodders - a location finding
AUTHOR(S): Grassmann, Von Eberhard
CORPORATE SOURCE: Freising, Germany
SOURCE: Kraftfutter (1996), (1), 27-8, 30

Searched by Barb O'Bryen, STIC 308-4291

CODEN: KFFUAS; ISSN: 0023-4427
PUBLISHER: Verlag Alfred Strothe
DOCUMENT TYPE: Journal; General Review
LANGUAGE: German
AB A review with no listed refs. on the kinetics of enzyme reactions, definition of enzyme activity, and detn. of enzyme activities in foods and feeds.

L155 ANSWER 25 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:380435 CAPLUS
DOCUMENT NUMBER: 122:127538
TITLE: Immunochemical method for determination of exogenous enzymes in substrates and differentiation of exogenous from endogenous enzymes
INVENTOR(S): Hengerer, Bastian
PATENT ASSIGNEE(S): ECO SYS Chemische Analysen GmbH, Germany
SOURCE: Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| EP 636884 | A1 | 19950201 | EP 1994-110195 | 19940630 |
| R: BE, CH, DE, DK, FR, GB, LI, NL | | | | |
| DE 4323959 | A1 | 19950216 | DE 1993-4323959 | 19930716 |
| DE 4323959 | C2 | 19950622 | | |

PRIORITY APPLN. INFO.: DE 1993-4323959 19930716
AB The amt. and activity of an exogenously added enzyme in a bioindustrial process (e.g. in the food or feed industry) are monitored, and exogenous and endogenous enzymes are differentiated, by use of antibodies to determinants which differ between the exogenous and endogenous enzymes. Thus, cellulase activity was detd. in com. Roxazym (mixt. of cellulases and glucanases) added to chicken feed. A polyclonal antiserum to Roxazym coupled to magnetic particle-bound goat anti-mouse IgG was mixed with a buffered homogenate of a feed sample, the particles were isolated with a magnet and washed, and the activity of the enzyme on CM-cellulose was detd. by measuring the glucose released with a com. kit.
IT **9012-54-8**, Cellulase **9015-78-5**, Glucanase
**37278-89-0**, Xylanase
RL: **ANT (Analyte)**; ANST (Analytical study)
(immunochem. method for detn. of exogenous enzymes in substrates and differentiation of exogenous from endogenous enzymes)

L155 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1996:36835 CAPLUS
DOCUMENT NUMBER: 124:173761
TITLE: In-feed assay of enzymes by radial enzyme diffusion - recent developments and application to analysis in **pelleted** feed
AUTHOR(S): Walsh, Gary
CORPORATE SOURCE: Dep. Ind. Biochem., Univ. Limerick, Ire.
SOURCE: Biotechnology in the Feed Industry, Proceedings of Alltech's Annual Symposium, 11th, Lexington, Ky., May 8-10, 1995 (1995), 331-6. Editor(s): Lyons, T. P.; Jacques, Kathryn Ann. Nottingham University Press: Nottingham, UK.
CODEN: 62FEAP
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Cellulase (CM-cellulose substrate) and proteinase (gelatin substrate) were

detd. in feed by radial enzyme diffusion assay. The assay method was sufficiently sensitive to detect enzyme prepns. at concns. below normal inclusion levels in feed. Cellulase, fungal amylase, and pentosanase can be **pelleted** at temps. .ltoreq.80.degree. (bacterial amylase .ltoreq.90.degree.) without substantial loss in activity.

IT **9012-54-8**, Cellulase
RL: **ANT (Analyte)**; BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(detn. in feed by radial diffusion assay)

L155 ANSWER 27 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1992:192683 CAPLUS
DOCUMENT NUMBER: 116:192683
TITLE: Determination of enzymes in feed
AUTHOR(S): Ranfft, K.
CORPORATE SOURCE: Freising, D-8050, Germany
SOURCE: VDLUFA-Schriftenreihe (1991), 33(Umweltaspekte Tierprod.), 513-19
CODEN: VDSCEE; ISSN: 0173-8712
DOCUMENT TYPE: Journal; General Review
LANGUAGE: German
AB A review with 4 refs. (no bibliog.) on the detn. of the catalytic activity of enzymes in feed. The detn. of protease with azocasein substrate and the detn. of phytase by measuring the phosphate formed with Na phytate are described.

L155 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1992:5362 CAPLUS
DOCUMENT NUMBER: 116:5362
TITLE: Assay of very low cellulolytic activity in fodder supplemented with enzyme preparation
AUTHOR(S): Burianova, T.; Kopecny, J.; Sajdok, J.; Kas, J.
CORPORATE SOURCE: Dep. Biochem. Microbiol., Inst. Chem. Technol., Prague, 166 28, Czech.
SOURCE: Animal Feed Science and Technology (1991), 33(1-2), 41-8
CODEN: AFSTDH; ISSN: 0377-8401
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The assay of cellulolytic activity in cases where cellulase is added to com. fodder mixts. requires a very sensitive method owing to the very low levels of activity present. A very simple plate method with Congo Red for the detection of hydrolyzed CM-cellulose (CMC), was optimized and the detection limit of 0.5 unit/g (one unit corresponds to 1 mg of reducing sugars released from CMC during 30 min of reaction at pH 5.5 and 40.degree.) was achieved. The method was standardized to the common CMC method evaluated on the basis of the detn. of reducing sugars by the Somogyi-Nelson procedure.

IT **9012-54-8**, Cellulase
RL: **ANT (Analyte)**; ANST (Analytical study)
(detn. of, in fodder)

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